UNITED STATES MARINE CORPS

COMMENTS ON

JOINT OPEN SOURCE TASK FORCE REPORT AND RECOMMENDATIONS

(WORKING GROUP DRAFT DATED 6 JANUARY 1992)

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FINAL REPORT--PROVIDED FOR INFORMATION

Contents

EXECUTIVE SUMMARY

The report as drafted fails to satisfy the guidance provided by the Director of Central Intelligence...

There are two major problems with the report:

(1) It has not been properly staffed--this is not to cast blame, only to point out that the combination of a very short timeframe and disconnects within and outside the Task Force have resulted in an extraordinarily limited document which fails to provide the Director of Central Intelligence (DCI) with the necessary balanced view of national open source intelligence (OSCINT) requirements and capabilities as well as an estimate of the resources necessary to fulfill those requirements by developing the needed capabilities.

(2) The report fails to integrate the perspectives of a very broad community of military, non-military, and private sector consumers, and lacks vision in other areas--no document which fails to recognize the severe deficiencies in our existing capabilities, much less the radical shortfalls in meeting emerging requirements, can be considered satisfactory.

Over-all the approach taken by the Task Force is one of incremental adjustment designed to limit requirements, rather than one of radical realignment designed to satisfy requirements.

The report fails to meet the essential requirement for Executive action and Congressional support: it does not define the problem, the desired outcome, or the means by which a national OSCINT strategy and capability can be established for the benefit of the government as well as the private sector.

We recommend that an entirely new Task Force be constituted, under the leadership of the Administrator of the Defense Technical Information Service (DTIC), and with the assistance of elements of the intelligence community. This is one instance when the intelligence community does not have the internal expertise to fully define the requirements and the needed capabilities. A complete report, to include detailed manning, funding, and facilities requirements, as well as program objectives and milestones, can be ready within ninety days of commission.

INTRODUCTION

...we believe that our concerns and our recommended improvements are generic in nature and would be endorsed by the broad majority of OSCINT collectors, producers, and consumers--inside and outside the intelligence community--that were not consulted in the preparation of this report to the DCI.

This report complements the Task Force report in that it does not disagree in principle with any of the Task Force recommendations. However, the Task Force report reflects a limited understanding of the widespread demand for OSCINT in the military--and by extension in other areas of the government--and fails to offer innovative and long-range prescriptions for improving our Nation's capability in this area.

This report amplifies the Task Force report--to the extent possible under the established deadline of 15 January 1992--by proposing three specific initiatives, one a "quick fix" for FY 92, the others a comprehensive combination of a $50 million/40 person initiative for FY 93-979, and a $100 million/80 person initiative for FY 94-99--together these initiatives establish a national capability for OSCINT collection, computation, and communication--a capability which will meet the needs of users throughout the government and in the private sector.

Finally, this report diverges from the Task Force report in that we believe the OSCINT situation within the existing Intelligence Community is indeed in disarray; that the Task Force has failed to solicit a full range of consumer and producer commentary on requirements and capabilities; and that the Task Force report is in error when it states that its conclusions reflect the consensus of the Intelligence Community.

The most basic problem with the Task Force report is that it has provided a relatively good definition of open sources, albeit failing to include multi-spectral imagery (MSI), and then proceeded to ignore the vast shortfalls in global collection, processing, and exploitation of these same sources.

The final draft states:[1]

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[1] Open Source Task Force, "Joint Open Source Task Force Report and Recommendations" (Working Group Draft dated 6 January 1992, S), page 2.

"By Open Source we refer to publicly available information appearing in print or electronic form. Open Source information may be transmitted through radio, television, and newspapers, or it may be distributed by commercial databases, electronic mail networks, or portable electronic media such as CD-ROM's. It may be disseminated to a broad public, as are the mass media, or to a more select audience, such as gray literature, which includings conference proceedings, company shareholder reports, and local telephone directories. Whatever form it takes, Open Source involves no information that is classified at its origin; is subject to proprietary constraints (other than copyright); is the product of sensitive contacts with U.S. or foreign persons; or is acquired through clandestine or covert means.

The report fails to come to grips with the complexity of the open source world and the means required to collect, compute, and communicate OSCINT across all topical areas and all political and cultural boundaries. The report fails to reflect either the obstacles or the opportunities in terms of sources, producers and production media, and consumers with mutual interests (not only within the government as a whole, but including the private sector and ultimately foreign organizations).

This Marine Corps report will first discuss in detail our concerns with the draft report proposed for submission to the DCI, and will then provide substantive information about our view of needed improvements in the over-all national OSCINT situation. While our views must of necessity focus on what we have learned as a military service, and reflect our experience in standing up a new National Foreign Intelligence Program (NFIP) analysis and production facility (the USMC Intelligence Center), we believe that our concerns and our recommended improvements are generic in nature and would be endorsed by the broad majority of OSCINT collectors, producers, and consumers--inside and outside the intelligence community--that were not consulted in the preparation of this report to the DCI.

SUMMARY OF REPORT DEFICIENCIES

We do not see a balanced approach to OSCINT in the draft report.

The report does not reflect the scope and depth of open source requirements from the broad intelligence, defense, and non-defense communities.

The report as drafted fails to satisfy the guidance provided by the DCI in three substantial ways:

(1) The report does not address the DCI's interest in examining ways in which the proliferation of open source materials of all kinds (emphasis added) can be handled. The Marine Corps has a very strong interest in commercial MSI and considers OSCINT to be an all-source discipline. The report reflects a lack of familiarity with OSCINT developments throughout the broader community and the private sector, a probable result of early domination of the draft by individuals most familiar with text processing to the exclusion of commercial database exploitation, foreign video broadcast exploitation, defense attache reporting and domestic collection, LANDSAT/SPOT exploitation, and related commercial-off-the-shelf (COTS) applications and industrial internal research & development (IR&D) efforts. We do not see a balanced approach to OSCINT in the draft report.

(2) The report does not reflect the scope and depth of open source requirements from the broad intelligence, defense, and non-defense communities. As a result, the report seriously understates the deficiencies in our all-source OSCINT requirements and related capabilities.

(3) The report does not reflect the experience, views, and recommendations of most community OSCINT experts, nor does the report reflect the experience, views, and recommendations of those in the private sector who have spent significant resources on these issues. A number of individuals recognized for their contributions to OSCINT over the years, many of them senior Central Intelligence Agency employees, have not had an opportunity to contribute to the report.

The report specifically fails to address or enumerate the needs of the Services, the theater Commanders-in-Chief (CINC), or the defense intelligence functional managers, and it does not address requirements and capabilities needed outside the

intelligence community but directly pertinent to the ability of the community to fulfill competing requirements for classified collection, processing, and production.

The report fails to identify unfunded deficiencies of other elements of the government which have a specific role to play in the OSCINT arena--the Federal Research Division (FRD) of the Library of Congress (LC), for instance, has been unable to respond to seventy per cent of the requirements identified to it over the past several years, for lack of funding. No one in FRD was consulted by the task force members.

The report fails to describe the manning, dollars, facilities, and capabilities that exist today, and fails to provide any specific idea of manning, dollars, facilities, and capabilities that are required in the future.

The report fails to identify the major role which must be played by the private sector if our national OSCINT requirements are to be met. The privatization of encyclopedic data, to include geographic information, must be dramatically accelerated.

The report identifies the copyright issue but fails to examine the urgent requirements for modernization of the legal framework governing open sources.

The report fails to address counterintelligence and competitive activity needs in relation to our national open sources.

The report is over-classified and of limited utility as a basis for further investigation into OSCINT requirements and needed capabilities which are the focus of the DCI's inquiry.

SUMMARY OF MARINE CORPS VIEWS

Our greatest shortfall in OSCINT is our lack of definition of the requirements, and particularly the degree to which OSCINT products can be substituted for classified products.

Our greatest shortfall in OSCINT is our lack of definition of the requirements, and particularly the degree to which OSCINT products can be substituted for classified products.[2]

(1) Community surveys have concentrated on identification and description of existing open source databases and services;

(2) Industry, notably The MITRE Corporation, has done well at defining how technology can be applied to open source information;

(3) No one has attempted or adequately defined what consumers throughout government (much less throughout the private sector) require in terms of OSCINT, nor how OSCINT could be substituted for more expensive fragmentary compendiums of classified information.

We must distinguish OSCINT from clandestine or overt human intelligence (HUMINT) as a means of focusing executive attention on foreign print and voice/video media whose timely exploitation is critical to our national competitiveness, and to ensure the inclusion of MSI and other commercial imagery capabilities.

(1) OSCINT offers highest return on investment of any discipline/source area;

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[2] The Marine Corps and its leadership have been actively pursuing open source solutions to intelligence information deficiencies for over two years. The establishment of the USMC Intelligence Center at Quantico in November 1987, and intensive efforts by the Center to obtain Third World information unavailable from classified databases, led to the development of an "Open Source Exploitation Strategy", a joint effort between the Marine Corps Combat Development Command (MCCDC) and the USMC Intelligence Center. For a description of the strategy see K. Muzbeck and M.B. Garnot, "Establishment of Electronic Open Source Exploitation Capabilities for Quantico Community; Enhancements to Existing Breckenridge Library Funded by Intelligence", Memorandum dated 4 April 1989.

(2) OSCINT has no advocate and there is no structure through which competing and duplicative initiatives can be integrated;

(3) OSCINT is cross-disciplinary (includes signals and images) and shouldn't be strictly a HUMINT endeavor;

(4) We need to scrub our requirements, both current and future, to determine shortfalls in capabilities for obtaining OSCINT (technical journals needing digitization, needed attaches and data entry coordinators by topical area and region, and government subsidization or long-term contracting for MSI production.

(5) Existing priority documents can be used to guide OSCINT--it is the resource managers who have been neglecting OSCINT's potential.

We should establish an OPEN SOURCE COMMITTEE with a mix of consumer, production, collection, ADP, budget, and R&D representatives...

We should establish an OPEN SOURCE COMMITTEE with a mix of consumer, production, collection, ADP, budget, and R&D representatives; task them with consolidating FY 92-97 resources and establishing a spending plan for <u>government</u> side of concept:

(1) Immediate objective in FY 92 should be establishment of an OPEN SOURCE COMMITTEE with a Chairperson (Senior Intelligence Service), Executive Secretary, Research Assistant, and Secretary --we should consider the possibility of establishing the committee at the Senior Inter-Agency Group level rather than at the Intelligence Community Staff (ICS) level in order to fully integrate all elements of the government;

...establishment of a national joint government-private sector Center for the Exploitation of Open Sources (CEOS).

(2) FY 92-97 target should be $50 million and 40 people to establish a national cooperative Center for the Exploitation of Open Sources (CEOS) to serve as a central repository and satisfy minimal mandatory requirements for open source research such as is normally conducted by the FRD. Both funds and manning could to be found within existing initiatives in President's Budget and

proposed to SSCI/HPSCI for consolidation;

(3) FY 94-99 target could be additional $100 million and 80 people responsible for coordinating global academic and business data entry responsibilities by topical and regional area, perhaps through a National Knowledge Foundation (NKF) or National Science Foundation (NSF) process. For both of the latter initiatives:

(a) New Naval Intelligence Center (NIC) building at Suitland may have space due to cut of 500 people from its projected occupancy--approximately 75,000 square feet, some since allocated to other requirements, was freed up by the cut in manning;[3]

(b) Alternative site, not available until FY 95 if at all, is old Foreign Science & Technology Center (FSTC) building --this site is particularly attractive if FSTC does obtain the new building because the old building complex lends itself to a government site in what was the Sensitive Compartmented Information Facility (SCIF), and rental of the various floors in the main building to private sector partners. The proximity of the University of Virginia, the rural but accessible location, and the likely support of the senior Senator from Virginia make this the most attractive alternative;

(c) A West Virginia location may also be worth considering due to interest of the Chairman of the Senate Appropriations Committee.

We should designate a focal point or executive agent for OSCINT exploitation. An expansion of the Defense Gateway Information System (DGIS) and integration of CEOS into the DTIC structure, or a cooperative venture between DTIC, the National Technical Information Service (NTIS), and FRD would be good starting points.

(1) Government sponsorship of a central repository to which both government and private users can gain access will permit control and security auditing as well as optimize government exploitation;

(2) Government sponsorship, through broad dissemination of the functional requirements concept and related system specifications of the Computer Aided Tools for the Analysis of Science and Technology (CATALYST), will help establish a generic

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[3] NIC already is programmed to receive one important OSCINT capability. For a description see Information Handling Committee, "Establishment of the Centers for Ocean Surveillance and Maritime Information Coordination (COSMIC)", Draft Concept Paper, Fax dated 15 March 1991.

analysis "toolbox" as useful to business and academia as to government;

We need to understand, through a comprehensive survey as well as ongoing auditing, how our national open source databases are being exploited and what the threat is to proprietary financial and technical information.

(3) We need to understand, through a comprehensive survey as well as ongoing auditing, how our national open source databases are being exploited and what the threat is to proprietary financial and technical information;

(a) We can help private enterprise protect what it must protect to remain competitive in research and development;

(b) While we cannot and should not try to restrict access to public databases, knowing how these databases are being exploited by others could help justify our own program of foreign open source exploitation to Congress

(c) A Special National Intelligence Estimate (SNIE) should be requested and completed immediately.

Possibly under Department of Commerce leadership, we should seek establishment of a joint government-business "Blue Ribbon" Commission, ideally chartered by the President, to rapidly outline objectives, milestones, and a spending plan for the private (business and academic) side of the OSCINT concept...

Possibly under Department of Commerce leadership, we should seek establishment of a joint government-business "Blue Ribbon" Commission, ideally chartered by the President, to rapidly outline objectives, milestones, and a spending plan for the private (business and academic) side of the OSCINT concept:

(1) Privatization of data entry--corporate adoption of individual countries, scientific and technical areas, or specific recurring publications is essential--government cannot afford to unilaterally build and maintain a global data entry infrastructure;

(2) Creation of selected academic focal points, nurtured and guided by a NKF/NSF process in monitoring open source data in

particular topical and regional areas, will provide both government and the private sector with sources of expertise, and stimulate greater coverage; and

(3) Recognition that our cooperative (but government-controlled) repository will be but one of many; the broader concept of "national knowledge management" must begin to emerge, and be built upon an infrastructure which links all automated databases and gradually develops a national knowledge collection and processing plan which encompasses all information, not just information of "intelligence" value.[4]

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[4] It is imperative that the intelligence community efforts to improve OSCINT not only be coordinated with others in and out of government who have mutual interests, but that our OSCINT effort be fully integrated with major computing and technical intiatives such as those of the Federal Coordinating Council for Science, Engineering, and Technology ("Grand Challenges: High Performance Computing and Communications"), related "computer superhighway" concepts coming off the Hill, and the forthcoming Presidential "National Technology Initiative" being crafted by the Departments of Commerce and Energy. For a description of the latter initiative's genesis, and its plan to reorganize the nation's 726 laboratories to gain the best return on federal investment, see Lucy Reilly, "Bush Shift Adds Tech to Agenda: Cabinet, Industry to Craft National Policy", in Washington Technology (9 January 1992), page 1. We must establish a national knowledge management strategy and a bridge to a national information technology architecture. OSCINT must be part of the fabric of the nation, not an isolated escoteric discipline.

DETAILED CRITIQUE OF THE REPORT

The report's attempt to dispel the impression that OSCINT is in disarray reflects a parochial view that is inconsistent with the rapidly changing information situation and the rapidly changing needs of military and non-military consumers in government, as well as consumers in the private sector.

Page 1

The report focuses on the Foreign Broadcast Information Service (FBIS)--and later in the report on the Office of Information Resources (OIR) and the Foreign Aerospace Science & Technology Center (FASTC)--to the exclusion of such other organizations as FRD, NTIS and DTIC/DGIS. Throughout the report the emphasis is on the traditional producers of the limited types of OSCINT familiar to the community, and not--as should be the case--on the consumers.

The drafters of the report are focusing on collection and processing redundancy when the greatest problem is the lack of a global data entry capability spanning the full range of media (text, interview, voice broadcast, video broadcast, and commercial imagery including MSI).

The report exaggerates the "inherent versatility, responsiveness, and sectoral expertise of the existing Open Source sector".

Page 2

The report alludes to the importance of OSCINT as a means of reducing the demands on other collection disciplines. This is important, but needs to be stressed, with emphasis being placed on the gross imbalance between expenditures on the other disciplines versus expenditures on OSCINT.

> "Only when easy, open sources prove insufficient, or clearly require cross-checking--and national technical means require augmentation--should American intelligence management begin to think about other collection efforts."[5]

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[5] George A. Carver, Jr., "Intelligence in the Age of Glasnost", Foreign Affairs (Summer 1990), page 158.

"American intelligence analysts now have to cope with a torrent of information and data. Amid an exponential proliferation of satellites and fiber optics, interlinked computers and data bases, modems and FAX machines, 24-hour cable news, and the opening of area, subjects, and all manner of sources that until recently were shielded, proscribed, or denied, these analysts are becoming information junkies, never far from an overdose. If effectively harnessed and channeled, then astutely exploited, this new information and data flood can dramatically improve the quality and accuracy of American intelligence assessments and estimates on all manner of crucially important subjects; but it creates new complexities as fast as it clarifies old mysteries. In a flood, furthermore, it is easy to be overwhelmed and drowned if one is not both sensible and careful." (emphasis added).[6]

The report's attempt to dispel the impression that OSCINT is in disarray reflects a parochial view that is inconsistent with the rapidly changing information situation and the rapidly changing needs of military and non-military consumers in government, as well as consumers in the private sector. The report reflects no understanding of who the "end users" are, nor the distinctions between their needs.[7]

The report severely understates the global data entry problem and the need for both a massive collection and digitization effort conducted by the private sector with government assistance and direction, and an international pattern of information exchange agreements in which foreign information is acquired in digital form.

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The report reflects a lack of understanding of the utility and scope of the U.S. Foreign Intelligence Requirements Categories and Priorities (FIRCAP) maintained by the Foreign Intelligence Priorities Committee (FIPC).

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[6] Ibid., page 159.

[7] What is remarkable about this conclusion on the part of the Task Force is that it flies in the face of all published evidence, including the findings of the House Appropriations Committee (HAC) investigation, "Exploitation of Unclassified Media for Intelligence Purposes" (15 March 1989). Highlights from this report are contained in George L. Marling, "HAC Staff Report on Open Source Exploitation" (Memorandum for the Record dated 6 November 1989, S).

The report is correct in highlighting the critical and obstructive nature of copyright and contract limitations on the exploitation and dissemination of open source materials, but misses the point: in the era of electronic information, it is the law which must change, not the medium and its use. So-called "hackers" are in fact information entrepreneurs, the "robber-barons" of the new frontier--the prophets of the age of cyberspace. The Intelligence Community must help policy-makers and the public understand the need for a new legal framework in which restrictions on the utilization of information, information as the new "Commonweal", are not tolerated.[8]

The report is seriously misleading when it states that "pulsing" and related surveys conducted for the report "not only validated the views and conclusions of previous studies but significantly, surfaced an encouraging spirit of cooperation among Open Source organizations". There are three problems with this view:

(1) The previous community reports are of marginal utility in assessing OSCINT requirements. The best of the reports, under the auspices of the Intelligence Producers Council (IPC) and the HUMINT Committee, both with the assistance of the Information Handling Committee (IHC), ably documented existing OSCINT data bases and areas of endeavor throughout the community.[9] The report of the Strategic Planning Working Group has not been

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[8] This in no way ignores the rights of information producers to royalty fees and other renumeration; in the same way that technical means must be developed to seal, authenticate, and validate raw information, such means must be extended to track the accession, extraction, integration, and transmission of raw information such that the originator is recognized and rewarded in an appropriate manner. What cannot be tolerated or condoned by law is any restriction on the private or public exploitation of open sources. There are remarkable analogies between the archaic law of information and the laws of discrimination which previously sanctioned severe constraints on the liberties of people of color.

[9] Cf. Intelligence Producers Council, Report on Automated Open-Source Data Bases (Draft August 1990, final due out April 1991, S/NF/NC); HUMINT Committee, Directory: Information Resources Based on Foreign Media and Publications (DCIC 10006-85, HC 85-207, July 1985, FOUO); and HUMINT Committee, Directory: Information Resources Based on Foreign Media and Publications, Annex (DCIC 10007-85, HC 85-208, July 1985, S/NF). Another report which has been cited by others but not widely circulated is the Open Source Exploitation Program (March 1986), approved by then Acting DCI John McMahon.

widely disseminated, and is viewed by many of those who have seen it as being relatively useless. Not one of these reports has adequately distinguished between the varying consumer groups and the different sources of OSCINT, nor established with any credibility or specificity the requirements and the capabilities needed to satisfy those requirements.[10]

(2) The report does not reflect the views of the broader community and a wide variety of experts familiar with OSCINT. Among those who were not consulted in a timely or thorough fashion:

(a) Service Chiefs and their staffs

(b) Theater Commanders-in-Chief

(c) Defense Intelligence functional managers

(d) Assistant Secretaries of Defense (notably for Special Operations/Low Intensity Conflict, where OSCINT is especially important)

(e) FRD/LC, where 70% of the studies requested by elements of the government over the past three years could not be carried out for lack of funding;[11]

(f) Most defense intelligence production facilities;

(g) Most Federal Contract Research Facilities (FCRF), including The MITRE Corporation which has been investing 10 man years and half a million dollars each year in OSCINT technology applications and requirements;[12] and

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[10] By contrast, the HAC report, supra note 7, as cited in Mr. Marling's memorandum, notes in detail the problems facing the community, including the fact that users of open source information are dispersed, are often remote from and unknown to the collectors or producers of the open source information, and do not have a financial stake in what is collected and processed.

[11] Personal discussion with Dr. Louis R. Mortimer, Acting Chief, Federal Research Division, 8 January 1992, Headquarters U.S. Marine Corps. Dr. Mortimer's staff has kept detailed records of requested studies and cost projections.

[12] For a useful review of what constitutes a minimal mandatory OSCINT research capability for a hypothetical organization, and a review of the internal research & development initiative sponsored by The MITRE Corporation, see Open Source Processing Research Initiative (OSPRI), Draft MITRE Technical Report, 6 January 1992.

(h) Many of the relatively few OSCINT experts available within the government and the private sector.[13]

(3) Because the report does not reflect the broader view, it exaggerates the utility and reach of the efforts it does recognized (e.g. the excellent work by the Intelligence Community Librarians Committee) while failing to understand the severe deficiencies in areas beyond its ken (e.g. the desperate military and humanitarian needs for LANDSAT and SPOT imagery).

Page 6

The report confirms its inadequacies in recognizing only two kinds of users: analysts, and members of the science & technology community. As will be documented in the section on military requirements, there are a wide variety of military OSCINT users at the strategic, operational, tactical, and technical levels--there are undoubtedly equivalent communities of users in the commercial and academic sectors, and in other parts of the government, that the report fails to identify.[14]

Page 7

The statement that "(m)uch of the basic architecture to address (the OSCINT) challenge exists..." is misleading if not false. There are insurmountable obstacles to the integration of OSCINT into most intelligence processing systems, obstacles that will not be addressed until the community comes to grip with the need for a data-driven architecture that is seamless and affords analysts transparent access to multi-media multi-lingual data at multiple levels of security.[15]

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[13] The most well-known, and interested Executive and Congressional staff, are listed in the final section. Others could be identified for specific areas of interest by those listed.

[14] For an overview of the military requirements which OSCINT can satisfy, and a distinction between the users at the four levels of need (strategic, operational, tactical, and technical), see Robert D. Steele, "Intelligence Support for Expeditionary Planners", Marine Corps Gazette (September 1991), pages 73-79.

[15] The report does not recognize the inherent limitations of the existing intelligence community organization, and does not put forth any innovative ideas for creating new capabilities. For one view of how the community should be approaching change, see Keith Hall, "Challenges Faced by U.S. Intelligence", American Intelligence Journal (Summer/Fall 1990), pages 1-3.

The Department of Defense, including as primary elements the DTIC and the Joint National Intelligence Development Staff (JNIDS), would be an excellent candidate for the role of Executive Agent...

The report is correct in identifying the need for an Executive Agent. The Department of Defense, including as primary elements DTIC and the Joint National Intelligence Development Staff (JNIDS), would be an excellent candidate for the role of Executive Agent, with the special advantage of having at hand military intelligence personnel able to "jump start" the data collection and digitization effort in peacetime.

The report's reference to "common concern" archives is misrepresentative in that most of these archives pertain to traditional denied area targets and are of limited value to the wide variety of customers concerned with the Third World and emerging threats that are non-governmental, non-conventional, non-linear in development, random in occurrence, and unfettered by rules of engagement (ROE) or doctrine.[16]

Page 8

The report's assumption that "technologies are not yet sufficiently mature to settle on standards or to undertake immediate large scale system integration" is of questionable validity. Not only are there a number of COTS applications and capabilities that are integratible under an open systems architecture in conformance with those international standards that are established, but now, at a time when the OSCINT media and data flows are changing in radical ways, is exactly the time to begin a global international effort to agree on data standards and other protocols which will facilitate data exploitation regardless of changes in technology.

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[16] For a clear distinction between the conventional and the emerging threat, see General Alfred M. Gray, "Global Intelligence Challenges in the 1990's", American Intelligence Journal (Winter 1989-1990), pp. 3-7, esp. p. 5. For additional commentary on why the existing intelligence structure is unable to deal with emerging issues, see Robert D. Steele, "Intelligence in the 1990's: Recasting National Security in a Changing World", American Intelligence Journal (Summer/Fall 1990), pp. 29-36, esp. p. 30-33.

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While the report recognizes the need for a clearinghouse mechanism and the value of end-to-end prototyping, it does not highlight the existing success stories, including CATALYST as developed by the Office of Scientific & Weapons Research (OSWR); the role of JNIDS in helping import and export such applications; the role of the Intelligence Research & Development Council (IRDC) Advanced Information Processing and Analysis (AIPA) Steering Group, and the fact that the single biggest obstacle to developing integrated OSCINT and classified analysis toolkits is the fragmentation of both the research & development (R&D) and the Automated Data Processing (ADP) communities within individual agencies as well as the community at large.[17] A new Deputy Director for R&D and a new Deputy Director for Communications and Computing, each with budget authority across organizational lines, should be considered.

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The report's focus on FBIS, OIR, and FASTC is evident, and reflects an incredibly narrow view of OSCINT which fails to address the concerns and interests of the DCI, the President, or Congress.

The report exaggerates the value of FBIS reporting, which often serves as no more than a record of current media reporting.

The report properly recognizes the absence of a dedicated collection infrastructure, but fails to recognize both the magnitude of the multi-media collection problem, and the need for a cooperative government-private sector endeavor which is ultimately international in nature.

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[17] It merits comment that the finest example of a working prototype for an analyst's toolkit, one which relies heavily on open source input, was developed by analysts and not by ADP "professionals". CATALYST should be stabilized and exported throughout the community as quickly as possible. A complete report on generic functional requirements addressed by CATALYST is provided in Diane Q. Webb, CATALYST: A Concept for an Integrated Computing Environment for Analysis (CIA/DI/OSWR, October 1989). A complete report on the operational prototype now used by over forty analysts is provided in Samuel Hahn and Don Parrish, CATALYST: Sketching the Steps Toward an Integrated Computing Environment for Analysis (CIA/DI/OSWR, October 1991). The latter document identifies a number of funded and unfunded development areas.

In focusing on non-traditional sources, the report ignores the single most important open source for military operations, that of multi-spectral imagery and commercial overhead photography.

Page 12

In focusing on non-traditional sources, the report ignores the single most important open source for military operations, that of multi-spectral imagery and commercial overhead photography.

The report erroneously suggests that the existing "infrastructural complex represented by these three common concern organizations is capable of providing broad access to commercial data bases and gray literature...given adequate resources." These organizations are not structured, nor culturally suited, to meet the much broader and comprehensive demands of the wide variety of users whose needs are not addressed by the report.

The report as a whole...fail(s) to provide specific recommendations for needed manpower, funding, facilities, and capabilities.

Page 13

The report as a whole, and this section in particular, fail to provide specific recommendations for needed manpower, funding, facilities, and capabilities.

Page 14

The report's statement that "there is general accord among Open Source producers and users" is grossly misleading.

The report's focus on the Country Team as the source of most foreign publications and gray literature reflects a significant lack of appreciation for the capabilities of the military and the private sector.

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The report, in focusing on the need to understand what is stored and where, fails to recognize that the greatest problem facing the community is that of global collection and data entry --a central digitization facility and gateway (the latter recognized by the report as a requirement), which provides on-line access to all databases throughout the community, is an essential element of the OSCINT solution.[18]

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OSCINT is multi-disciplinary, and the HUMINT community, devoted as it is to the clandestine arts, is unsuited to manage the community effort. A separate OSCINT Committee, as recommended by the former Commandant of the Marine Corps, is required.[19]

The report's most disturbing failure of vision is reflected in its abject acceptance of the possibility that the Department of Justice will support existing copyright and royalty conventions, and not help develop an entirely new legal frame of reference for information handling, a frame of reference consistent with the President's desire to increase our national competitiveness.

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The report's most disturbing failure of vision is reflected in its abject acceptance of the possibility that the Department of Justice will support existing copyright and royalty conventions, and not help develop an entirely new legal frame of reference for information handling, a frame of reference consistent with the President's desire to increase our national competitiveness. Information needs to be treated--if necessary --as an eminent domain issue, but should ideally be established

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[18] For a concise detailed commentary on the necessary national knowledge management strategy, and specific recommended changes within the intelligence community to accommodate our OSCINT requirements, see Robert D. Steele, "Applying the New Paradigm: How to Avoid Strategic Intelligence Failures in the Future", American Intelligence Journal (Autumn 1991), pages 43-46.

[19] Supra note 16.

as part of the "commonwealth", with provision for the recognition and reward of the information originators (no longer "owners"). We must pursue and expand the concept of "fair use" by developing electronic measures which allow new legal concepts to be enacted.

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In considering the array of alternatives the report fails to describe a CEOS-like capability, a concept articulated in a number of cited references and originally conceived of by the IHC staff as an Open Source Information Exchange (OSIX), but rather settles for the concept of a center which appears to be no more than a coordinating mechanism. Throughout the report one

(The report authors) appear to believe that the mechanisms they describe will help prioritize requirements so they can meet the most important ones in an orderly fashion. This concept is 180 degrees off the mark and amounts to limiting the Nation's OSCINT capability...

...what we really need is a "paradigm shift", a 100X to 1000X increase in resources devoted to OSCINT, and an approach which seeks to identify and fully satisfy ALL requirements for open source exploitation

receives the impression that the authors think the existing structure is sound and needs only an incremental increase in resources. They appear to believe that the mechanisms they describe will help prioritize requirements so they can meet the most important ones in an orderly fashion. This concept is 180 degrees off the mark and amounts to limiting the Nation's OSCINT capability--those of us who have been actively involved in establishing OSCINT requirements understand that what we really need is a "paradigm shift", a 100X to 1000X increase in resources devoted to OSCINT, and an approach which seeks to identify and fully satisfy ALL requirements for open source exploitation.The report also does not consider the possibility and desirability of a NKF/NSF effort to nurture and guide efforts in the private sector.

MILITARY VIEW OF OSCINT

...persistent deficiencies in how the United States Government (USG) as a whole collects, computes, and communicates open source information and OSCINT.

The report commissioned by the DCI could reasonably be expected to break new ground in the area of OSCINT. Unfortunately, for reasons associated with both a lack of time and bureaucratic myopia, the report as drafted does not offer any significant contribution to the resolution of the OSCINT challenge. Below we provide a military perspective on OSCINT requirements and needed capabilities.

Building upon our understanding of the overwhelming demands from a wide variety of consumers of intelligence, both in and out of government, this material postulates a number of persistent deficiencies in how the United States Government (USG) as a whole collects, computes, and communicates open source information and OSCINT. This is not to say that the existing capabilities for exploiting OSCINT are "broken"--they are simply inadequate to the meeting vastly increased needs for OSCINT by the government as well as the private sector, including not only U.S. firms but also the academic community and the individual American citizen. Further, <u>if one scrutinizes the charters of these organizations, there are grounds for suggesting that they are not fulfilling their mission, and that their charters and their budgets require revision</u>.

The President has clearly stated his desire to improve our competitiveness as a Nation. While there has been much discussion about the relative merits of using national intelligence to support American enterprise, such a course is fraught with difficult questions of legality and fairness. A far better approach--one which is both relatively inexpensive and provides a greater return on investment than is common to the traditional intelligence disciplines--is to focus on improving our Nation's access to open source information, from which each consumer can derive tailored OSCINT.

Within the government, the era of confrontation and containment, an era which required vast expenditures of funds to maintain a sophisticated and continuous technical watch over "denied areas", is decisively ended. There are still requirements for covert technical capabilities and their human counterpart--clandestine operations--but these must be refined and in some cases radically altered to enable them to be

effective against emerging threats which are not as readily identifiable as the nuclear and conventional forces of a very few

In an era of radically declining resources, it is imperative that our covert and clandestine capabilities be focused on those priority topics and areas for which there is no OSCINT alternative. OSCINT should be our first line of analysis.

governments. In an era of radically declining resources, it is imperative that our covert and clandestine capabilities be focused on those priority topics and areas for which there is no OSCINT alternative. OSCINT should be our first line of analysis.[20]

The threats of the future, including environmental deterioration and natural catastrophe, technological proliferation as well as unanticipated and complex break-down, demographic rampages, etcetera--and the opportunities of the future, including strategic transnational economic alliances and information sharing--all require a return to scholarship.

Such scholarship is complicated by the vast out-pouring of multi-media multi-lingual information from every corner of the globe. Our concepts and organization have simply not kept pace with the changing realities of information access and information technology. We have failed to develop a national knowledge management strategy and a commensurate national information technology strategy.

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[20] It would not seem necessary to emphasize or document this point, but with the exception of John McMahon, our intelligence community leadership, and their resource management subordinates, appear to consistly denigrate the value of OSCINT. As so clearly documented in the HAC investigative survey, a survey which included interviews with Ambassadors, Deputy Chiefs of Mission, analysts, and other key personnel around the globe, "without exception, the consensus is that unclassified media are the single most important source of valuable intelligence information" (emphasis in original); as quoted in the Marling memorandum, supra note 7, pages 1 and 4. The same HAC report noted that the various recommendations in the McMahon-approved Open Source Action Group (OSAG) report "have either been ignored or are being implemented perfunctorily on an ad hoc basis or parochial basis." It is evident that the current attempts by the existing Open Source Task Force are a continuation of this trend of ignorance, and offer little hope for radical improvement.

The need for such a strategy is compelling, and has three underpinnings:

(1) We can no longer afford to rely almost exclusively on very expensive and difficult to process technical collection capabilities; the budget deficit and the Congressional imperative that we do more with less requires that we seek alternative means;

(2) The emerging threats are predominantly in the open --we are not proscribed by organization or secrecy from understanding these threats, but rather by our own lack of organization and interest; and finally;

(3) OSCINT provides both an order of magnitude increase in our return on investment strictly from the collection/analysis point of view, and an order of magnitude increase in our return on investment in terms of its utility and exploitability through sharing within government, with coalition forces, and with U.S. industry and the academic community.

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The government cannot resolve these deficiencies alone; a concerted cooperative effort with industry and the academic community will be required, and should ultimately include foreign and international organizations. As an immediate interim measure, this report addresses the requirement for a cooperative government-business-academic CEOS.

OSCINT, in short, is an alternative paradigm, a "new paradigm" from within which we can approach the task of devising a new National Security Act and a new national intelligence structure.

MILITARY CONSUMER'S VIEWPOINT

The majority of our national consumers for intelligence, particularly in the military, have--at best--a SECRET clearance, and more often than not in these days of increased security concern, no active clearance at all.

Most consumers do not have Sensitive Compartmented Information (SCI) or Top Secret (TS) clearances. Many of the consumers who do have such clearances do not have the time or the inclination to read compendiums of SCI information. The majority of our national consumers for intelligence, particularly in the military, have--at best--a SECRET clearance, and more often than not in these days of increased security concern, no active clearance at all. This is particularly the case with our single most important military consumers, the platoon commanders and pilots. While eligible for a SECRET clearance, most are not technically eligible for SCI products. All would prefer unclassified information that could be shared with their fellow officers, their troops, and allies as required.

The consumer's point of view at the policy level has been ably articulated by such individuals as Sumner Benson[21] and Robert Blackwell[22]. More recently, both at the Department of the Navy's Technology Initiatives Wargame 1991[23], and within the

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[21] Sumner Benson, a former CIA employee who has served as a senior civil servant in DoD, has for several years shared his insights with students in the CIA-sponsored "Intelligence Successes and Failures" course. Benson clearly articulates the policy-makers lack of time and competing sources, as well as the lack of clearances within the policy-maker's staff. "A SECRET paragraph is better than an SCI page...your primary competition is the Post."

[22] Robert Blackwell, a former Deputy Assistant Secretary of State and member of the National Security Council staff, has briefed participants in the twice-annual "Intelligence Policy Seminar" sponsored by the Intelligence Producers Council at Harvard's John F. Kennedy School of Government. His remarks are consistent with those of Sumner Benson.

[23] See the section on military wargames for details focusing on intelligence and related shortfalls. The Navy wargame identified OSCINT as the single most important priority to be addressed by the national intelligence community--such a

...the four principal groups of military consumers (are the) department, defense agency, and service planners and programmers... theater commanders-in-chief and their staffs...tactical commanders and their staffs...(and the) technical acquisition managers and system designers...

United States Marines Corps[24], the urgent unmet requirements for a dramatic increase in OSCINT, as well as a radical change in the manner in which the intelligence community as a whole organizes its electronic databases, have been publicly articulated and endorsed by a broad cross-section of consumers.

It helps to distinguish the four principal groups of military consumers, consumers whose needs are not now being adequately met by existing national and defense intelligence products and their supporting electronic system architectures:

(1) Department, defense agency, and service planners and programmers responsible for training, equipping, and organizing military forces;

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finding is hardly consistent with suggestions that the OSCINT situation is "by and large" well in hand. Army findings, as developed in its own technology wargames in 1990, support the need for a new paradigm for intelligence.

[24] Besides articles by the (then) Commandant of the Marine Corps and a member of his staff, the Marine Corps has recently completed its first annual call for intelligence production requirements. Fleet Marine Force requirements, notably from various independent Marine Air Ground Task Forces in the Fleet Marine Force, stressed the unfulfilled requirements for unclassified military intelligence products on both conventional and non-conventional forces. In DESERT STORM/ DESERT SHIELD, and in such humanitarian operations as SEA ANGEL in Bangladesh, Marine Corps general officers and their staffs learned that unclassified products were absolutely essential as a means of satisfying both their internal operational requirements for readily disseminable and exploitable materials, and for sharing with coalition partners and international non-governmental organizations. As the Marine Corps prepares to deal with emerging threats and rapidly changing ad hoc coalitions formed for crises of short duration, the Marine Corps' need--representative of the broader DoD need--for OSCINT products will increase.

(2) Theater CINCs and their staffs responsible for planning and employing earmarked forces throughout specific regions;

(3) Tactical commanders and their staffs responsible for planning and executing specific contingency missions; and

(4) Technical acquisition managers and systems designers responsible for developing systems, defeating countermeasures, and (in theory) ensuring that technical systems are appropriate to the probable environments within which they will be employed.

The most important consumer group in terms of long-term resource conservation and sound national fiscal strategy is the department, defense agency, and service planner & programmer constituency. This group, comprised of representatives from each Service--and the department and defense agency civilians who provide oversights in their respective areas of responsibility--plans and programs for the training, equipping, and organizing our forces, and for related capabilities of common concern. It is this group that considers the mid-term and long-term threat, determines what capabilities are required, and then sets in motion the lengthy and extremely expensive process of defense acquisition.

Most of the people is this group do not need classified intelligence to fulfill their responsibilities. Many will argue this point, but it is important to distinguish between the need to decide what level of capability one requires, and the need to actually understand the technical details of opposing systems. It is also essential to understand that many top-level policy-makers who do have SCI clearances do not have the time to read compendiums of SCI information, while their gatekeepers, those who screen incoming materials, may not have SCI clearances at all.

At the strategic level, it is far more important for planners & programmers to have an appreciation of the general situation, and to an extent of the regional situation, for each of the different defense missions areas:[25]

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[25] Defense mission areas are distinct from the defense intelligence functional areas, and represent predominantly technical areas of interest pertaining to different kinds of military capabilities. At all levels of analysis, the national and defense intelligence communities have tended to focus solely on the technical intelligence aspects of each mission area, and have failed to adequately convey the realities of operational geography and civil factors (e.g. bridge loading data) which frequently make technical lethality issues secondary if not irrelevant.

The mission areas of concern to the Marine Corps are reproduced below as a means of illustrating the scope of our interest, and making obvious the degree to such mission areas can be illuminated through open source research and analysis:

MA-11 Command & Control
MA-12 Intelligence
MA-13 Security
MA-15 Special Operations
MA-22 Ground Tactical Mobility/Countermobility
MA-23 Close Combat
MA-24 Fire Support
MA-32 Antiair Warfare
MA-33 Assault Support
MA-34 Offensive Air Support
MA-35 Control of Aircraft, Missiles, and Remotely Piloted Vehicles
MA-36 Electronic Warfare
MA-41 Supply
MA-42 Maintenance
MA-43 Transportation
MA-44 Expeditionary Engineering
MA-45 Health Services
MA-46 Services

Much if not all of the information we need to support the Concept-Based Requirements System (CBRS) can be established through OSCINT, and has the added advantage of being easily exploitable in the over-all Planning, Programming, and Budgeting System (PPBS) with its numerous requirements for on-going justification within the Executive and to various Congressional committees. It merits comment that the strategic planners and programmers are not warfighters--they do not have a critical requirement for classified operational intelligence other than to keep current in order to support the warfighters and advise the policy makers.

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Three examples of the kind of unclassified strategic generalizations that should be provided by the intelligence

community to this consumer group are provided below[26]:

(1) Ground mobility. Much of the Third World does not permit the kind of cross-country mobility that is required for off-road maneuver. Most of the Third World also appears to have such a limited transportation infrastructure (lines of communication), with poor roads and bridges generally able to handle 30-40 tons, that one strategic generalization that quickly emerges is that pertaining to the weight and size of ground mobility systems. If Service planners and programmers had been given an adequate appreciation for these factors, an appreciation that the Marine Corps has easily developed us..ng only unclassified sources, it is unlikely that the M1A1 tank and the M-198 systems would have been so uncritically received.

(2) Air mobility. Much of the Third World sees sustained temperatures above 80 degrees Fahrenheit, what would be called a "hot" day in aviation circles...yet most aircraft are designed for "warm" days and provide their optimal performance in the 60-70 degree range. This means that our forces operating in the Third World will be obliged to use aircraft whose lift and range will be constrained. This has particularly serious implications for theater lift and for "maneuver from the sea" concepts of operation calling for over-the-horizon launches.

(3) AIDS. This is a strategic generalization our planners and programmers have not yet begun to address. The issue is: to what extent is AIDS so prevalent in the Third World that any U.S. force planning to render disaster relief should be equipped with AIDS protective clothing and other measures? How to troops handle mass casualties, most infected with AIDS, without bearing an unacceptable degree of risk of contagion?

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[26] Most of the examples used in this report are drawn from the Marine Corps experience because this Service, in standing up a new National Foreign Intelligence Program production facility, the USMC Intelligence Center at Quantico, Virginia, has devoted two years to the study of alternative means of satisfying its unfulfilled Third World intelligence requirements. It was in the course of doing its first major study, Overview of Planning and Programming Requirements for Expeditionary Operations in the Third World (USMC Intelligence Center, March 1990) that Center personnel, with the assistance of analysts from throughout the community, established the validity of using unclassified to guide major strategic acquisition decisions, and identified a family of products, predominantly unclassified, which could meet the needs of Marine Corps consumers at each level of analysis. The needs of other services can be expected to differ somewhat because of different roles and missions as well as different geographic "universes" upon which generalizations are based, but the approach is a generic one.

...most theater commanders and staff could get along quite well without a great deal of the classified intelligence they receive now, provided they were afforded an adequate OSCINT capability.

At the theater level, while the focus on specific regions narrows the "universe" from which unclassified generalizations can be constructed, most of what is required in peacetime can still be met through a review of open sources and the production of OSCINT. At the theater level, besides monitoring general orders of battle (OOB), readiness, and sustainability of potentially hostile military capabilities, there is an increased interest in the opportunities and constraints afforded by operational geography and civil factors. Again, most of these requirements can be satisfactorily fulfilled through well-planned monitoring of open sources. There is no substitute for classified collection assets and carefully defined classified production and dissemination, particularly in the indications & warning (I&W) arena, but the point must be reiterated: most theater commanders and staff could get along quite well without a great deal of the classified intelligence they receive now, provided they were afforded an adequate OSCINT capability.

At the tactical level, there are three aspects to consider: training, planning, and liaison.

At the tactical level, there are three aspects to consider: training, planning, and liaison. In the training arena, classified intelligence is simply not useful. More than one commander has stated their need for unclassified recognition manual and "how they fight" reference manuals, including "Intelligence Preparation of the Battlefield" templates[27]. Most

[27] Intelligence Preparation of the Battlefield (IPB), a very useful doctrine for understanding the employment of conventional forces and establishing intelligence requirements consistent with likely dispositions and employment patterns, was developed by the U.S. Army. It has yet to be applied to non-conventional forces (e.g. narco-terrorists, Third World paramilitary forces. and insurgent groups) in part because "methods" often presuppose that the enemy is going to have a pre-determined order of battle and pre-determined methods of

troops, including the Non-Commissioned Officers (NCO) responsible for the bulk of their training, are not eligible for clearances for lack of a background investigation. Most officers, especially junior officers in troop-leading positions, while eligible for clearances because of the required Basic Investigation (BI), do not have active clearances for SECRET, much less TS information. The training requirement must be met with unclassified information.

The planning requirement should ideally be met through a combination of unclassified and SECRET information. Most TS/SCI is simply too cumbersome and voluminous (without commensurate relevance to the task at hand) to be useful, and will in many cases be ignored, even by those who do have the requisite clearances.

The liaison requirement, now met in wartime through the extensive and relatively arbitrary waiver of dissemination restrictions, needs to be satisfied in peacetime as it would be in wartime.[28] Throughout the world the military needs unclassified commercial alternatives to existing intelligence resources--this need is particularly urgent in the imagery and the mapping, charting, & geodesy (MC&G) arena. Such unclassified materials are essential as a means of establishing common concepts, doctrine, and operating procedures with allies, many of whom are allies for unanticipated contingencies of short duration (e.g. disaster relief).

The technical acquisition and system design requirements for intelligence support three aspects: system capability, defeat of countermeasures, and environmental conditions which include both the regional or global prevalence of the system and counter-systems, and the operational geography or civil factors which

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fighting. Perhaps the greatest challenge facing tactical intelligence analysts, however, is that which combines the need to rely on OSCINT, and the fact that most of the emerging threats are "ad hoc", often random in nature, and not associated with previously recognized governments or conventional forces.

[28] During TIG-91 the operators in the INTEL Cell, including a Marine Colonel, a Navy Wing Commander who led the lead flight in DESERT STORM, and a Navy Captain (O-6) playing the role of theater CINC were adamant in their requirement for unclassified information, both for use with our own personnel without clearances, and for <u>immediate</u> sharing with coalition partners. They were insistent that we should "train as we fight" and that the data bases and <u>standard</u> families of products should include unclassified products (imagery as well as text) that do not require "in extremis" waivers to disseminate to uncleared personnel.

facilitate or constrain system employment.

In denied areas there is no question but that selected aspects of enemy system design and doctrine must be the subject of classified reporting. The same is true of countermeasures. In most of the world however, this information is readily available through industry publications. Environmental conditions, including such factors as bridge loading data, is generally available in unclassified publications, including "gray literature", but not routinely exploited by the community.

MILITARY PRODUCER'S VIEWPOINT

There is a prejudice within the intelligence production community against the use of open source information. This prejudice, while understandable in the context of the various cultures of secrecy characteristic of the intelligence community, is unreasonable given the consumer's desire for unclassified products, the relative cheapness of open sources, and the extraordinary availability of open source information.

The producer is faced with a dilemma in dealing with OSCINT.

On the one hand, the entire national intelligence community has spent every year since its inception in 1947 developing covert technical and clandestine human collection capabilities. Although the collection management process provides for OSCINT tasking[29], the individual analyst and production manager has an easier time of it if they channel their tasking through the traditional disciplines of HUMINT, Imagery Intelligence (IMINT), and Signals Intelligence (SIGINT). One obvious disadvantage of this organizational arrangement is that unclassified information will often be classified solely in relation to its collector, and may or may not be disseminated to others.[30]

On the other hand, the individual analyst, even if they have the capability to exploit open sources through their reference librarian or through direct communication with the Country Team, generally will not have the knowledge or the time to review the vast quantities of materials even if they were provided at his or

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[29] The Foreign Intelligence Priorities Committee (FIPC) maintains a comprehensive U.S. Foreign Intelligence Requirements Categories and Priorities (FIRCAP) document which is updated monthly and reviewed in its entirety annually. FIRCAP priorities are "generic" and not discipline-specific.

[30] For a review of information pathologies and potential technical solutions spanning the strategic and tactical gamut between the Country Team, the theater, and parent organizations at the national level, see Robert D. Steele, National Security $C^3I^3H^3$: A Strategic and Tactical Information Management Perspective (University of Oklahoma, Programs in Public Administration, May 1987).

her desk, and would in any case be discouraged from excessive attention to open sources as opposed to classified sources[31].

...blind assumption that classified sources were "by definition" the only reliable sources...

...until today what no one has really called into question was the relative value of open sources as opposed to covert technical sources and clandestine sources...we have now reached a point where this is the issue to be addressed...

There is a prejudice within the intelligence production community against the use of open source information. This prejudice, while understandable in the context of the various cultures of secrecy characteristic of the intelligence community, is unreasonable given the consumer's desire for unclassified products, the relative cheapness of open sources, and the extraordinary availability of open source information.

To an extent, the consumers have permitted this prejudice to become entrenched because of their blind assumption that classified sources were "by definition" the only reliable sources, and their lack of understanding of the diversity and utility of open sources. Despite past studies emphasizing the value of open sources, until today what no one has really called into question was the relative value of open sources as opposed to covert technical sources and clandestine sources...we have now reached a point where this is the issue to be addressed.

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[31] Analysts discussing this problem in one running of the "Intelligence Producer-Consumer Course" offered regularly by the CIA commented that there was actually managerial disdain and potential retribution to be considered if analysts were routinely seen reading unclassified literature at their desk. A senior analyst, writing for Studies in Intelligence, has also noted that much of what analysts provide the policy maker is over-classified because of one SCI tid-bit--we need to seriously rethink how we present intelligence, and get away from practices which unreasonably constrain exploitation.

MILITARY COLLECTOR'S VIEWPOINT

Each of the three major disciplines, HUMINT, IMINT, and SIGINT, has major shortfalls in their capability to collect open source information. These shortfalls cannot be resolved by the government acting unilaterally...

It is difficult for collectors to take OSCINT seriously when their entire culture, their precepts for promotion as well as their informal social standing, is founded on the collection of classified information. This is particularly the case when most HUMINT collectors are outside the military domain, and the remaining collection assets are dominated by the priorities of national policy makers.

Each of the three major disciplines, HUMINT, IMINT, and SIGINT, has major shortfalls in their capability to collect open source information. These shortfalls cannot be resolved by the government acting unilaterally--only a cooperative effort with the private sector, and ultimately foreign organizations--will enable the creation of a global all-source data collection infrastructure.

The HUMINT arena offers a clear-cut example of a hierarchy in which those responsible for OSCINT are at the bottom. The fact is that in the world of clandestine operations, with its distinctions between denied, internal, covert, and specialty targets, those who are "declared" and those who are "overt" are at the bottom of the pecking order. When this state of affairs is exacerbated by an institutional reluctance to deal with military requirements, and a top-level management refusal to provide adequate priorities for Third World requirements, the dramatic shortfalls in overt collection against Third World military contingency requirements can be readily surmised.

There will be those that disagree with this representation, but the fact is that in DESERT STORM/DESERT SHIELD it took a heroic effort on the part of the domestic HUMINT cadre to obtain the intelligence needed for precision targeting against C^3 and infrastructure nodes--intelligence which could have been available, should have been available, and would have been

available had domestic collection efforts kept pace with requirements.[32]

The above personal and speculative account if offered for illustration purposes only. A more substantive review of exact manning and dollar allocations should make very clear where the HUMINT community places its priorities, while also documenting the severe shortfall in overt HUMINT collection against Third World collection priorities.

In the IMINT arena, there are severe shortfalls in our government-owned imaging capability (e.g. broad area search, short-notice search, and synoptic coverage necessary for mapping), as well as in our ability to take advantage of commercial imagery services, and an active policy--the 10 meter resolution limitation--which directly constrains the value of commercial services to the military.[33]

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[32] Even when the data is collected as a matter of routine, it is often discarded or stored in a manner which makes it irretrievable. The USMC Intelligence Center investigated the availability of Third World bridge loading data, and learned that while defense attaches routinely submit detailed reports, including hand-held photography, much of their reporting is either discarded or stored in warehouses.

[33] As established by a USMC Intelligence Center study, supra note 26, the fact is that we do not have the mapping, charting, and geodesy (MC&G) data--or the related precision targeting data--for most of the Third World. According to one study, completed in 1989, of 67 countries and two island groups of interest to the Marine Corps, twenty-two have no maps, and would require rapid exploitation of multi-spectral imagery with grid overlays. Mexico, Surinam, Bangladesh, Greece, and Turkey are in this category. An additional thirty-seven have only some 1:50,000 tactical maps, generally for the major ports and cities, and generally very dated (i.e. not showing roads, airfields, and other man-made features established in last ten years or so). Colombia, most of Central America, Peru, and most of our countries in Southwest Asia, Africa, and Asia fall in this category. Only ten of our sixty-nine areas of interest have complete 1:50,000 coverage, and that coverage is old, generally at least ten years out of date. This is a major reason why the Marine Corps must strive to obtain national and defense intelligence support for the privatization of our most urgent tactical mapping needs, which can be met by using multi-spectral imagery (MSI) with grid overlays. However, the existing 10 meter resolution restriction on domestic MSI products severely degrades our capability and by consensus of the TIG-91 INTEL Cell, must be retracted. Our lack of precision targeting data (e.g. precise locations of specific buildings, floors, and rooms or electronic

In the SIGINT arena, defined to include video broadcasts, there is no well-established capability to collect, process, and disseminate open source broadcasts, nor any structure for obtaining, cataloging, and exploiting the wealth of archived tapes produced by organizations such as Cable News Network (CNN).

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equipment suites) is even more severe.

SURVEY OF EXISTING CAPABILITIES--MILITARY VIEWS

THE SERVICE INTELLIGENCE CHIEFS, THE THEATER CINCS, AND THE DEFENSE INTELLIGENCE FUNCTIONAL MANAGERS SHOULD BE ASKED TO CONTRIBUTE TO THIS SECTION. NO REPORT SHOULD BE PUBLISHED WITHOUT SPECIFIC INPUT FROM THESE CONSUMERS AND THEIR NON-MILITARY COUNTERPARTS IN THE REMAINDER OF THE GOVERNMENT

MILITARY WARGAME RESULTS

Technology is not the show-stopper--management is where we must change the way we do business.

Our number one intelligence requirement should be the development of open source multi-media multi-level security systems (to include fostering of commercial and foreign capabilities through international standards).

Highlights

Below are highlights from the Technology Initiatives Game 1991 (TIG-91) "scrub" of COPERNICUS (Navy Space and Electronic Warfare (SEW) architecture, no expansion), and a brief summary of key C3I points from a related wargame, Global War 1991.[34] The language which follows is extracted directly from the official Marine Corps trip report; all emphasis is additive and highlights findings of the wargames of greatest significance to OSCINT.[35]

Vice Admiral Reynolds, Director, Test and Evaluation and Technology Requirements, reported the following key TIG-91 judgements to the Chief of Naval Operations:

(1) "Technology push is not the major issue...our most difficulty challenge is management of fast moving technology.

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[34] The Technology Initiatives Wargame 1991 took place at the Naval War College 21-25 October 1991, and included participants from throughout the intelligence and communications communities of the government. Three cells were exercised in support of a policy cell of flag officers: an Operations Cell, a C3 Cell, and an Intelligence Cell. Each cell in turn was divided into National, Theater, and Tactical Sub-Cells. Global War 1991 took place at Newport in June 1991. The Army's Technology Base Seminar Wargame took place at two different locations 23-26 April 1990 and 6-8 June 1990; although not cited here its results were consistent with the findings of the Navy-Marine Corps wargames.

[35] Marine Corps Trip Report: Technology Initiatives Wargame 1991 (21-25 October 1991); approved for dissemination by the AC/S C4I2 on 3 January 1991, the trip report was a collaborative effort by Mr. Ronald Elliott (SES); Cols Black, Lindblom, Mastrion, Smith, and Stankosky; LtCols Reager and Work; and Mr. Robert D. Steele.

(2) Open architectures facilitating use of commercial standards and formats is imperative.

C4I2 progress must be made in three areas: architectural, doctrinal, and technical; of these, the greatest progress at least expense can be made in the doctrinal area, followed by the architectural.

Technology is not the show-stopper--management is where we must change the way we do business.

Architecturally we must define a new paradigm of what information we need, how we handle it, and how it is delivered to the user; this new paradigm must include an information architecture (vice a system/command architecture) approach, must extend to include commercial and coalition capabilities, and integrate Geographic Position System (GPS) data.

Doctrinally we need to ensure we are represented in joint and other service "doctrine" forums. Cost will not be an impediment to progress--lack of innovative management at all levels is the show-stopper. We need a new approach to C4I2, both as functional mission area and as a new and powerful form of warfare. While some might not agree, many would suggest our new concepts must integrate unanticipated short-term coalitions, media operations, C4I2 oversight over weapons system design and employment concepts, new data requirements associated with precision targeting, unclassified data requirements necessary for real-time and coalition operations, and a very broad understanding of needed developments in concealment, deception, and covert communications capabilities suited to future adversarial C4I2 capabilities.

Technically the short-term emphasis should be on cross-theater, cross-service improvements in processing and dissemination applications that provide for standardized transparent access to multi-media data at multiple levels of security. In the mid-term, exploitation of open sources and commercial capabilities must be addressed. Over the longer term, cheap multi-discipline satellites, Identification of Friend or Foe (IFF) down to man/machine level, and portable C4I2 system for Marines should be priorities.

Intelligence Priorities

INTEL Cell investment priorities established early on in TIG-91 included, in this order as reported to the flag panel:

(1) Open source multi-media multi-level security systems (to include fostering of commercial and foreign capabilities through international standards)

(2) Automated all-source correlation system with integrated advanced/artificially intelligent processing and analysis tools (merge functionality of the CIA's CATALYST with Navy COPERNICUS and Marine Corps Tactical Automated Command and Control System (MTACCS) architecture)

(3) Information (database) architecture, multi-media in nature (start doing data driven system design)

(4) National all-source automated intelligence requirements and collection management system (integrate foreign intelligence priorities committee, disciplinary committee priority documents, and JCS intelligence priorities into a single coherent system which provides accountability and auditing capability to determine customer satisfaction)

(5) Cheap pop-up satellites, all-weather, multi-discipline

(6) Computer penetration technology across the board

(7) Virtual reality/multi-media alteration capabilities including truth validation

Intelligence Investment Strategies

The basic investment strategies related to these priorities and recommended by the INTEL Cell to the flag service included, in this order:

(1) Maximize inter-operability with commercial systems and products

(2) Facilitate/push international standards

(3) Use unclassified sources to maximum extent possible, particularly in building Third World encyclopedic database

(4) Plan for and develop capability to automatically sanitize all intelligence to any level of classification (operators in cell expressed very strong desire to "train as we fight" and create data structure now)

(5) Use Integrated Services Digital Network (ISDN) as core of coalition C4I2 approach

Intelligence Architectural Issues & Highlights

The key INTEL Cell architecture issues & highlights were:

(1) At the National Level: shift to an information architecture vice a system architecture; enforce, nurture, and

pursue use of commercial and international standards

(2) At the Theater Level: include coalition connectivity and classification constraints in architecture

(3) At the Tactical Level: establish global multi-media dissemination capability (to any vehicle/man)

Intelligence Doctrine Issues & Highlights

The key INTEL cell doctrine issues & highlights were:

(1) At the National Level: establish unclassified alternative databases & products suitable for broad dissemination to uncleared operators and sharing with allies; completely redefine precision targeting database needs and carry out pre-contingency database fill; develop national knowledge warfare concepts & plans; redefine & realign HUMINT to support contingency planning and execution

(2) At the Theater Level: develop Low Intensity Conflict (LIC) I&W methods and data elements; develop theater doctrine changes integrating new C3I precision targeting methods into campaign planning

(3) At the Tactical Level: remove 10M resolution constraint on U.S. commercial imagery; develop media interaction methods and military occupational specialties; develop collection rules of engagement (ROE) for multi-belligerent pre-war situations (i.e. outlining ROE for C3CM in deterrence phase)

Intelligence Technology Issues & Highlights

The key INTEL Cell technology issues & highlights were:

(1) At the National Level: install open source exploitation capabilities throughout community; develop single national automated data correlation capability (multi-media with time and location tags on all data to facilitate fusion); develop pop-up satellites for contingencies

(2) At the Theater Level: pursue "man in space" and "man on site" capabilities

(3) At the Tactical Level: develop multi-sensor battle damage assessment tools for near-real-time battle damage assessment from original delivery platform (e.g. improved gun sensors); develop technology enhancers for covert and clandestine HUMINT--sustained SATCOM power, life support systems; develop generic advanced workstation (a multi-level, multi-media, multi-window toolkit which allows an analyst to enter a seamless world of data regardless of level of classification or media type)

"Global War 1991" Intelligence Issues & Recommendations

At Global War 1991, a few intelligence "issues" and recommendations were in various working papers or emerged in discussion:

(1) Importance of coalitions to warfighting as well as peacetime engagements absolutely requires a well-developed capability for sanitizing, sharing, and disseminating intelligence to allies (including short-term allies and non-governmental organizations)

(2) Importance of intelligence as the trigger for reconstitution of forces cannot be exaggerated (yet there is little support for fencing intelligence so it can provide the advance warning needed)

(3) Clear concern over lack of warning capability on destabilizing events including non-military trends and occurrences (warning capabilities needed to trigger reconstitution of forces for Third World regional wars do not exist and will take years to build)

(4) Increased emphasis required on HUMINT, on analysis even if at expense of collection, and on maintenance of databases in non-traditional areas including trade, environment, medical, and demographic

(5) Absence of joint doctrine on intelligence, particularly as it might refer to coalition operations and support to law enforcement or to non-governmental disaster relief operations, continues to constrain planners

The Army Need for a Paradigm Shift

The Army Technology Wargame identified a major C3I programmatic implications which should bear on the community approach to OSCINT: "The problem with C3I is not one of low visibility or funding, but the challenge of an overall architecture for sensors, processing, and communications. Such an architecture exists for Division and above, and for individual weapons systems, but the intermediate structure is extremely diffuse. The key to ALBF is the efficient delivery of information, tailored to the recipient, wherever [and whenever] it is needed. Current approaches focus on automating existing manual processes, and linking those processes that have always communicated. ALBF may require the Army to alter this paradigm." (emphasis added)

SURVEY OF UNFULFILLED MILITARY OPEN SOURCE REQUIREMENTS

THE SERVICE INTELLIGENCE CHIEFS, THE THEATER CINCS, AND THE DEFENSE INTELLIGENCE FUNCTIONAL MANAGERS SHOULD BE ASKED TO CONTRIBUTE TO THIS SECTION. NO REPORT SHOULD BE PUBLISHED WITHOUT SPECIFIC INPUT FROM THESE CONSUMERS AND THEIR NON-MILITARY COUNTERPARTS IN THE REMAINDER OF THE GOVERNMENT

CONCLUSION

The few additional details contained in the second Executive Summary (e.g. Presidential Blue Ribbon Commission) do not need elaboration.

OSCINT as a capability is too important to be given such short shrift as has been the case with the initial draft report to the DCI.

We recommend that the report be properly classified (i.e. not be classified); that it at least be staffed to all intelligence community principals as well as government and private sector consumers and producers; and that a significantly expanded working group take on the task of developing a serious and comprehensive plan--including detailed manpower and resource requirements--for establishing a national knowledge management strategy and a related information technology initiative.

In order to better fulfill the expanded task, we recommend that an entirely new Task Force be constituted, under the leadership of the Administrator of the Defense Technical Information Service (DTIC), and with the assistance of elements of the intelligence community. This is one instance when the intelligence community does not have the internal expertise to fully define the requirements and the needed capabilities. A complete report, to include detailed manning, funding, and facilities requirements, as well as program objectives and milestones, can be ready within ninety days of commission.

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OSCINT POINTS OF CONTACT

NOTE: The list below includes only the most obvious starting points, and does not include the members of individual working groups such as those supporting the STIC and various ICS committees. It also does not include the defense intelligence functional manager, the theater J-2s, the service intelligence chiefs, members of the Council of Defense Intelligence Producers (CDIP), and other critical points of contact for establishing the minimal mandatory OSCINT requirements and capabilities for the military (to include humanitarian assistance considerations).

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GLOSSARY

ADP.....Automated Date Processing
AIPA.....Advanced Information Processing and Analysis
ALBF.....AirLand Battle Future

BI.....Bachground Investigation

C3CM.....Command, Control, and Communications Countermeasures
C4I2.....Command and Control, Communications and Computer, Intelligence and Interoperability
CATALYST....Computer Aided Tools for the Analysis of S&T
CBRS.....Concept-Based Requirements System
CDIP.....Council of Defense Intelligence Producers
CEOS.....Center for the Exploitation of Open Sources
CINC.....Commander-in-Chief
CNN.....Cable News Network
COTS.....Commercial-Off-The-Shelf

DCI.....Director of Central Intelligence
DGIS.....Defense Gateway Information System
DTIC.....Defense Technical Information Center

ESG.....Executive Steering Group (of the OSAG)

FASTC.....Foreign Aerospace Science & Technology Center
FAX.....Facsimile
FBIS.....Foreign Broadcast Information Service
FCRF.....Federal Contract Research Facility
FIPC.....Foreign Intelligence Priorities Committee
FIRCAP.....(U.S.) Foreign Intelligence Requirements Categories and Priorities
FRD.....Federal Research Division
FSTC.....Foreign Science & Technology Center
FY.....Fiscal Year

GPS.....Geographic Position System

HUMINT.....Human Intelligence

I&W.....Indications & Warning
ICS.....Intelligence Community Staff
IHC.....Information Handling Committee
IMINT.....Imagery Intelligence
IPB.....Intelligence Preparation of the Battlefield
IPC.....Intelligence Producers Council
IR&D.....Internal Research & Development
IRDC.....Intelligence Research & Development Council
ISDN.....Integrated Services Digital Network

JNIDS.....Joint National Intelligence Development Staff

LANDSAT.....Land Satellite
LIC.....Low Intensity Conflict

MA.....Mission Area
MC&G.....Mapping, Charting, & Geodesy
MSI.....Multi-Spectral Imagery
MTACCS.....Marine Corps Tactical Automated Command & Control System

NCO.....Noncommissioned Officer
NF.....No Foreign
NFIP.....National Foreign Intelligence Program
NIC.....Naval Intelligence Command
NKF.....National Knowledge Foundation (nominal)
NSF.....National Science Foundation
NTIS.....National Technical Information Service

OIR.....Office of Information Resources
OOB.....Order of Battle
OSAG.....Open Source Action Group
OSCINT.....Open Source Intelligence
OSIX.....Open Source Information Exchange

PPBS.....Planning, Programming, and Budgeting System

ROE.....Rules of Engagement

S&T.....Science & Technology
S.....Secret
SCI.....Sensitive Compartmented Information
SCIF.....Sensitive Compartmented Information Facility
SEW.....Space and Electronic Warfare
SIGINT.....Signals Intelligence
SNIE.....Special National Intelligence Estimate
SPOT.....(FR) Earth Observation Satellite

TIG.....Technology Initiative Game
TS.....Top Secret

USG.....U.S. Government
USMC.....U.S. Marine Corps